UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,828	08/14/2001	Aharon Satt	13750.4US01	8837

27148 7590 06/08/2005

POLSINELLI SHALTON WELTE SUELTHAUS P.C.
700 W. 47TH STREET
SUITE 1000
KANSAS CITY, MO 64112-1802

EXAMINER	
GREY, CHRISTOPHER P	
ART UNIT	**PAPER NUMBER**
2667	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,828	SATT ET AL.	
	Examiner	Art Unit	
	Christopher P Grey	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because:

(a) Figs 1-4 are objected to as having a handwritten label indicating the number of the pages of each fig; example: "Drawing Page 2 of 4"

Appropriate correction is required.

Claim Objections

2. Claim 4 is objected to because of the following informalities:

(a) Typographical error: "sideincludes" appears as one word.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-7, 10-15, 18, 25-27, 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson et al. (WO 02056564) in view of Dharanikota (US 2002/0107908)

Claim 1, 13, 33 Larsson et al. ('Larson' hereinafter) discloses a network resource manager that manages and measures the resources within a cellular (second side)

communications network (page 8 line 27-page 9 line 10 and page12 line 18- page 13 line 2). Larsson also discloses a network resource manager located in the Internet network (first side), responsible for radio resource management (page 11 lines 10-24 and see claim 1).

Larsson discloses the network resource manager using the information gathered about the resources to make a decision (analyze) as disclosed on page 12 line 18- page 13 line 2.

Larsson discloses controlling IP network resources using the network resource manager (see page 19 lines10-13, claim 1), and controlling resources within the cellular telecommunications network using a network resource manager coupled to a radio access bearer service manager (page 8 line 27- page 9 line 10 and page 11 lines 10-24). Larsson does not specifically disclose controlling the resource to the cell from the first side of the network.

Dharanikota discloses a network element (IP network element) that monitors, measures and controls Quality of service parameters. Dharanikota discloses the network element performing traffic shaping for the outgoing traffic to the network s neighboring nodes (cell) as disclosed on page 1 paragraphs 0012 and 0013.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the IP network resource manager as disclosed by Larsson with a traffic shaping module as disclosed by Dharanikota. The motivation for this modification is to monitor the traffic behavior in a node and ensure a level of service within that node (page 1 paragraph 0009 and 0006).

Claim 2, 25 Larsson discloses resource signaling between network resource managers (page 11 lines 10-24), particularly the IP network. Larsson also discloses the network resource manager having dynamic awareness of the network topology and network characteristics (monitoring) as disclosed on page 10 lines 19-page 11 line 9 and page 8 line 27- page 9 lines 10.

Claim 3, 26 Larsson discloses a network resource manager coupled to a radio access bearer manager for managing the resources within a cellular telecommunication network (page 8 line 27- page 9 line 10 and page 11 lines 10-24), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that the signaling and monitoring functions of a network resource manager as disclosed in the rejection of claim 2, would also be employed in the cellular network.

Claim 4 Larsson does not disclose a traffic shaper. However, Dharanikota discloses within a network element a traffic-shaping module for shaping outgoing traffic. It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network resource manager as disclosed by Larsson, with the traffic shaping module as disclosed by Dharanikota. The motivation for this modification is the same as that for claim 1.

Claim 5 Larsson discloses a network resource manager located within the cellular network for managing radio resources (page 8 line 27- page 9 line 10 and page 11 lines 10-24). Furthermore, Larsson discloses the NRM collecting measurements from the network (page 12 lines 18-page 13 line 2).

Claim 6 Larsson does not specifically disclose the measuring device including a queuing device.

Dharanikota discloses a network element that monitors, measures and controls Quality of service parameters. Dharanikota discloses the network element containing buffer queues.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network resource manager as disclosed by Larsson, to contain buffer queues. The motivation for this modification is for supporting traffic flows, and monitoring these queues for determining quality of service parametric information (resources) as disclosed on page 1 paragraph 0012.

Claim 7, 15, 27 Larsson discloses the measurement of resources in an IP network and cellular network as disclosed in the rejection of claim 1. However, Larsson does not specifically disclose a source rate and cellular rate.

Dharanikota discloses a network element that monitors, measures and controls Quality of service parameters. Dharanikota discloses the network element containing a buffer queue, where the incoming traffic is measured in the queue against an expected traffic profile (page 1 paragraph 0012). Dharanikota also discloses a number of quality of service measurements, including bandwidth, delay and packet loss rate (page 3 paragraph 0029).

Therefore it would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network resource managers within both the IP network and cellular network as disclosed by Larsson, to contain queues, where quality

of service measurements are taken from these queues. The motivations for this modification is to manage, measure and control incoming traffic flow via a queue and monitoring function.

Claim 10, 30 Larsson discloses a number of network resource managers may communicate with each other, performing resource signaling (page 11 lines 10-24) where network resource managers are located in each side of the network as disclosed in the rejection of claim 1.

Claim 11, 31 Larsson discloses controlling IP network (first side) resources using the network resource manager (see page 19 lines10-13, claim 1). Larsson does not disclose a traffic shaper. However, Dharanikota discloses within a network element a traffic-shaping module for shaping outgoing traffic.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network resource manager as disclosed by Larsson, with the traffic shaping module as disclosed by Dharanikota. The motivation for this modification is the same as that for claim 1.

Claim 12, 19, 32 Larsson discloses resource management, where the resources include bandwidth (page 12 line 18- page 13 line 2).

Claim 14 Larsson discloses the network resource manager performing the function of monitoring the network, where the network resource manager is located on both sides as disclosed in the rejection of claim 13.

Claim 18 Dharanikota discloses a network element (IP network element) that monitors, measures and controls Quality of service parameters. Dharanikota discloses

the network element performing traffic shaping for the outgoing traffic to the networks neighboring nodes (cell) as disclosed on page 1 paragraphs 0012 and 0013. Dharanikota discloses within the network element, a flow control module for allocating resources appropriately.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the IP network resource manager as disclosed by Larsson with a traffic shaping module as disclosed by Dharanikota. The motivation for this modification is to monitor the traffic behavior in a node and ensure a level of service within that node (page 1 paragraph 0009 and 0006).

4. Claims 8, 9, 16, 17, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson et al. (WO 02056564) in view of Dharanikota (US 2002/0107908) in further view of Kunnel (EP 0959582)

Claim 8, 16, 28 The combined teachings of Larsson and Dharanikota teach a source rate and cellular rate as disclosed in the rejection of claim 7. However, the combined teachings do not teach correlating the measurements into an estimate of the cellular rate in terms of source rate.

Kunnel discloses a communication network (element 11 in fig 4) comprising a network element (element 12 in fig 4) for communicating with a destination terminal (element 8.1), such as one within a cellular communications network (page 7 paragraph 0036). Kunnel discloses the network element monitoring and controlling the wireless link

connecting the network to the terminal, where within the network element a prediction of the available link capacity (cellular rate) is made based on the quality of service of the transmitter (source rate) as disclosed on page 3 paragraph 0012 and 0016.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network elements as disclosed by the combined teachings of Larsson and Dharanikota to predict a capacity as disclosed by Kunnel, within the cellular network as disclosed by Larsson, by using the transmitter network buffer fill state (page 3 paragraph 0016) as disclosed by Kunnel to make this prediction. The motivation for this modification is to control and manage the traffic over a transmission link (within the cellular network), which is communicating with another network element (within an IP network) as disclosed on page 3 paragraph 0011.

Claim 9, 17, 29 The combined teachings of Larsson and Dharanikota do not specifically disclose determining transformation parameters and applying these parameters to the measurements to represent the cellular rate on the second side of the network in terms of the source rate on the first side of the network.

Kunnel discloses the network entity/element containing a database for storing all of the relevant parameters of a link, where the control and management modules function to access these parameters (page 5 paragraph 0025).

Kunnel discloses the network element monitoring and controlling the wireless link connecting the network to the terminal, where within the network terminal a prediction of the available link capacity (cellular rate) is made based on the quality of service of the transmitter (source rate) as disclosed on page 3 paragraph 0012 and 0016.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the combined teachings of Larsson and Dharanikota with the database of parameters as disclosed by Kunnel. The motivation for this modification is the same as that for claim 8.

5. Claims 20, 21, 22, 23, 34, 35, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dharanikota (US 2002/0107908) in view of Kunnel (EP 0959582)

Claim 20, 34, 37 Dharanikota discloses a network element for monitoring traffic through a buffer queue contained within the network element (Page 1 paragraph 0012).

Dharanikota discloses the network element performing quality of service measurements, including throughput and bandwidth (page 3 paragraph 0029).

Dharanikota discloses obtaining a measurement of the occupancy of a queue (page 5 paragraph 0047 and 0049).

Dharanikota discloses the function of flow control using a buffer congestion threshold (page 1 paragraph 0012). However, Dharanikota does not specifically disclose determining a capacity estimation as an output rate from the queue.

Kunnel discloses a network element making a prediction (estimate) of an available link capacity, where a buffer fill state is used to determine the prediction (page 3 paragraphs 0012 and 0016).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network element as disclosed by Dharanikota, to contain a

predictor (page 10 paragraph 0046) for estimating a link capacity. The motivation for this modification is to adjust the transmission rate when a predicted capacity exceeds a threshold (page 3 paragraph 0013).

Claim 21 and 22, 35 and 36 Dharanikota discloses monitoring queue throughput and occupancy of a queue (page 5 paragraph 0047 and 0049 and page 3 paragraph 0029), where the relationship between the two is directly proportional.

Claim 23 Dharanikota does not disclose filtering a plurality of capacity estimations. Kunnel discloses a network element making a prediction (estimate) of an available link capacity (page 3 paragraphs 0012 and 0016). Kunnel also discloses an alternative method of estimation using a filtering method (page 7 paragraph 0035). It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the network element as disclosed by Dharanikota to contain a predictor as disclosed by Kunnel, where that predictor performs filtering, which would involve more than one estimation.

Claim 24 Larsson et al. ('Larson' hereinafter) discloses a network resource manager that may be implemented in hardware or software (page 11 lines 10-24)), that manages and measures the resources within a cellular (second side) communications network (page 8 line 27-page 9 line 10 and page12 line 18- page 13 line 2). Larsson also discloses a network resource manager located in the Internet network (first side), responsible for radio resource management (page 11 lines 10-24 and see claim 1).

Larsson discloses the network resource manager using the information gathered about the resources to make a decision (analyze) as disclosed on page 12 line 18- page 13 line 2.

Larsson discloses controlling IP network resources using the network resource manager (see page 19 lines10-13, claim 1), and controlling resources within the cellular telecommunications network using a network resource manager coupled to a radio access bearer service manager (page 8 line 27- page 9 line 10 and page 11 lines 10-24). Larsson does not specifically disclose controlling the resource to the cell from the first side of the network and a storage device.

Dharanikota discloses a network element (IP network element) that monitors, measures and controls Quality of service parameters. Dharanikota discloses the network element performing traffic shaping for the outgoing traffic to the network s neighboring nodes (cell) as disclosed on page 1 paragraphs 0012 and 0013.

Dharanikota also discloses buffer queues (page 1 paragraph 0012).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the IP network resource manager as disclosed by Larsson with a traffic shaping module and buffer queues as disclosed by Dharanikota. The motivation for this modification is to monitor the traffic behavior in a node and ensure a level of service within that node (page 1 paragraph 0009 and 0006).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Giroux et al. (US 6618378) discloses a network device performing resource management based on the occupancy of a number of queues.

(b) Agrawal et al. (US 2002/0107026) discloses a method for reserving resources in a wireless network. Monitored data is used to predict future resource demand.

(c) Arunachalam et al. (US 6631122) discloses a quality of service agent for an IP network. The quality of service agent couples an IP network and cellular network.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Grey
Examiner
Art Unit 2667

AFSAR QURESHI
PRIMARY EXAMINER
5/22/05